

REMARKS

Applicant has cancelled claims 2, 4, 6 and 10-12, amended claims 1 and 7, and added new claims 13 and 14. Accordingly, only claims 1, 3, 5, 7-9 and 13-14 remain in the application. Of the remaining claims, claims 13 and 14 respectively represent now-cancelled claims 6 and 10 in independent form. None of the other remaining claims 1, 3, 5 and 7-9 have been allowed.

Claim 1 was rejected as obvious over Sakai (5,815,621) in view of Boero (5,150,516). Claim 1 describes an optical connector system with two housings having mating faces where the front end portions of the optical fibers abut each other. As shown in applicant's Fig. 5, a quantity of potting material (64) lies in each bore front end portion around a fiber portion (24) in the bore. The bore front end portion has an inside diameter (E) no more than 110% of the fiber diameter (A). As described in the specification (page 6, line 26 - page 7, line 4), a viscous potting material or other liquid has a strong tendency to center a fiber within a bore slightly larger. Thus, applicant can rely on the centering tendency of the potting material, before it sets, to center the fiber within the bore, instead of requiring a bore diameter equal to that of the fiber diameter to center the fiber.

Sakai shows, in his Fig. 33 that the Examiner included in the Office Action, bare fibers such as 711 being inserted into holes 121 of a ferrule. His Fig. 26 shows adhesive 790 which is applied around portions of his fiber tapes to hold them in his ferrule. A major questions is whether Sakai applies his adhesive 790 around the front ends of his bare fiber portions 711, 721, so such adhesive could center the front ends of his fibers within the bores. In column 10, lines 47-49, he describes inserting the bare optic fiber until it projects through the holes. He then describes, in lines 57-63, that he injects adhesive into the opening 711 (Fig. 33) and also applies adhesive to the front surface of the ferrule. Since there is only an extremely small clearance between the front end of his fiber and the hole it lies in (126 μ m - 125 μ m is 1 μ m, providing a clearance of 0.5 μ m or 1/50,000 inch, per

column 5, lines 25-26), adhesive cannot flow through such a small clearance along an elongated gap such as shown in Sakai's Fig. 26, unless very high pressure is applied to it, which Sakai does not suggest. Accordingly, there is no indication in Sakai that his adhesive or potting material lies around his fiber front end that lies within his bore.

Boero shows a pair of connectors, but does not suggest applying a potting material around the front ends of his optic fibers. Accordingly, applicant believes that claim 1, as amended, should be allowed.

Claim 3, which depends from claim 1, describes the difference in bore and fiber diameters at the bore front end portion as no more than 102%. As described in the specification, a smaller clearance results in more tendency for the potting material to center the fiber within the bore. Although Sakai shows an extremely small clearance, he does not suggest the presence of potting material in the clearance space.

Claim 5 describes a pair of seals (80, 82 in applicant's Fig. 2) that lie in grooves of the housings and that press against each other to seal the volume where the mating faces lie. Hyzin shows, in his Fig. 9, a single O-ring 144 rather than a seal in each of two grooves, and with the seals abutting each other. Two abutting seals provide greater flexibility and avoid the need for an undercut groove to hold an O-ring in the manner shown in Hyzin.

Claim 7 describes an optical connector arrangement with fibers having end portions lying in bore end portions, with the bore inside diameter no more than 110% of the fiber diameter. Potting material lies between them. As discussed above in the case of claim 1, potting material centers the fiber within the bore, which provides more precise centering without requiring small tolerances and a very tight fit of the fiber end in the bore end. As discussed above in the case of claim 1, Sakai applies adhesive around his fibers, but he applies the adhesive around rear portions of the fibers after the front ends of the fibers have been fully

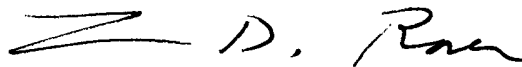
inserted through the bores. It is extremely unlikely that his adhesive would find its way to the front ends of his bores to completely surround them and center his fibers within his bores. Boero does not show potting or adhesive material holding his fibers in his bores.

Claim 8, which depends from claim 7, describes a rear end of the cavity open so potting material can be applied to the uppermost open end while the fibers are moved fully into the bores. In Sakai, his Fig. 26 indicates that his opening is at a side rather than at the rear end of his ferrule. Boero does not show potting material.

Claim 9, which depends from claim 7, describes a second housing with a second plurality of quantities of said potting material each lying around an end portion of one of the second fibers. Sakai does not show potting material lying around the front ends of any fibers, and neither does Boero.

In view of the above, favorable reconsideration of the application is courteously requested. If the Examiner should wish to discuss the application, he is invited to call Leon D. Rosen at (310) 477-0578.

Respectfully submitted,



Leon D. Rosen
Attorney for Applicant
Registration No. 21,077

10960 Wilshire Boulevard
Suite 1220
Los Angeles, CA 90024
(310) 477-0578